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TRUMAN BAILEY FROM THREE LIONS

AS IN HAWAII AND SAMOA, FISHERMEN ON THE LITTLE-KNOWN TOKELAU ISLANDS (Bulletin No. 2) STAND ON CORAL LEDGES AND FLING GIANT NETS OVER THE SEA

Bulletin No. 1, January 31, 1949

Grosvenor Arch Joins Utah's Natural Wonders

ONE of the New Year's first public announcements from the National Geographic Society describes a large and previously uncharted natural arch of white sandstone in the hills of southern Utah. This wonder of nature (illustration, next page) has been lifted from the obscurity of centuries and put on the map as Grosvenor Arch, a worthy addition to the many well-known arches and natural bridges of the Beehive State.

The magnificent formation actually is a double arch. Wind, sand, and water carved it from the side of a massive ridge that forms part of the north boundary of a grazing land known only to a handful of local cowmen as the Butler Valley. Located in the upper Wahweep country, it is 40 airline miles east of the southern tip of Rainbow Bridge, best known of the natural arches in the American Southwest.

Jack Breed, Harvard-trained naturalist and scion of the Boston, Massachusetts, family that gave its name to historic Breed's Hill, came upon the striking work of nature in leading his Escalante Expedition eastward from Bryce Canyon late last summer. Carefully photographing it and determining its exact position, he named it in honor of Gilbert Grosvenor, longtime President of the National Geographic Society and Editor of the *National Geographic Magazine.*

Gleaming white in the morning sun, Grosvenor Arch thrusts eastward from its ridge and towers above near-by trees to 152 feet above the valley floor. The under side of the main arch is 139 feet high, but the opening is worn only part of the way down, being 40 feet wide and 73 feet high. The second opening, just big enough to create the double-arch effect, is close to the top, and is six feet high and four feet wide.

Breed takes the view that, since the previously unnamed erosion formation was known to at least a few of the men who ride the wide neighboring ranges of sparse grassland, Grosvenor Arch cannot be termed a discovery in a strict sense. He first learned of it from a cowman who had never seen it although born and raised only 35 miles away.

Such men and their families compose most of the population of such towns as Cannonville and Henrieville, Utah, jumping-off places for a 30-mile pack trip to the newly charted arch. The nearest ranch house is almost as far from the arch as these towns.

The Grosvenor Arch, Breed maintains, has been until now the least-known of all the true arches in southern Utah. He found it possible, however, to drive a jeep over the rugged rangeland to its base.

NOTE: The region where Grosvenor Arch stands may be located on the National Geographic Society's map of The Southwestern United States. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

For further information, see two articles by Jack Breed: "Utah's Arches of Stone" (with 15 color photographs), in the *National Geographic Magazine* for August, 1947; and "Flaming Cliffs of Monument Valley," October, 1945*. *(Issues marked with an asterisk are included on a special list of Magazines available to teachers in packets of ten for $1.00.)*

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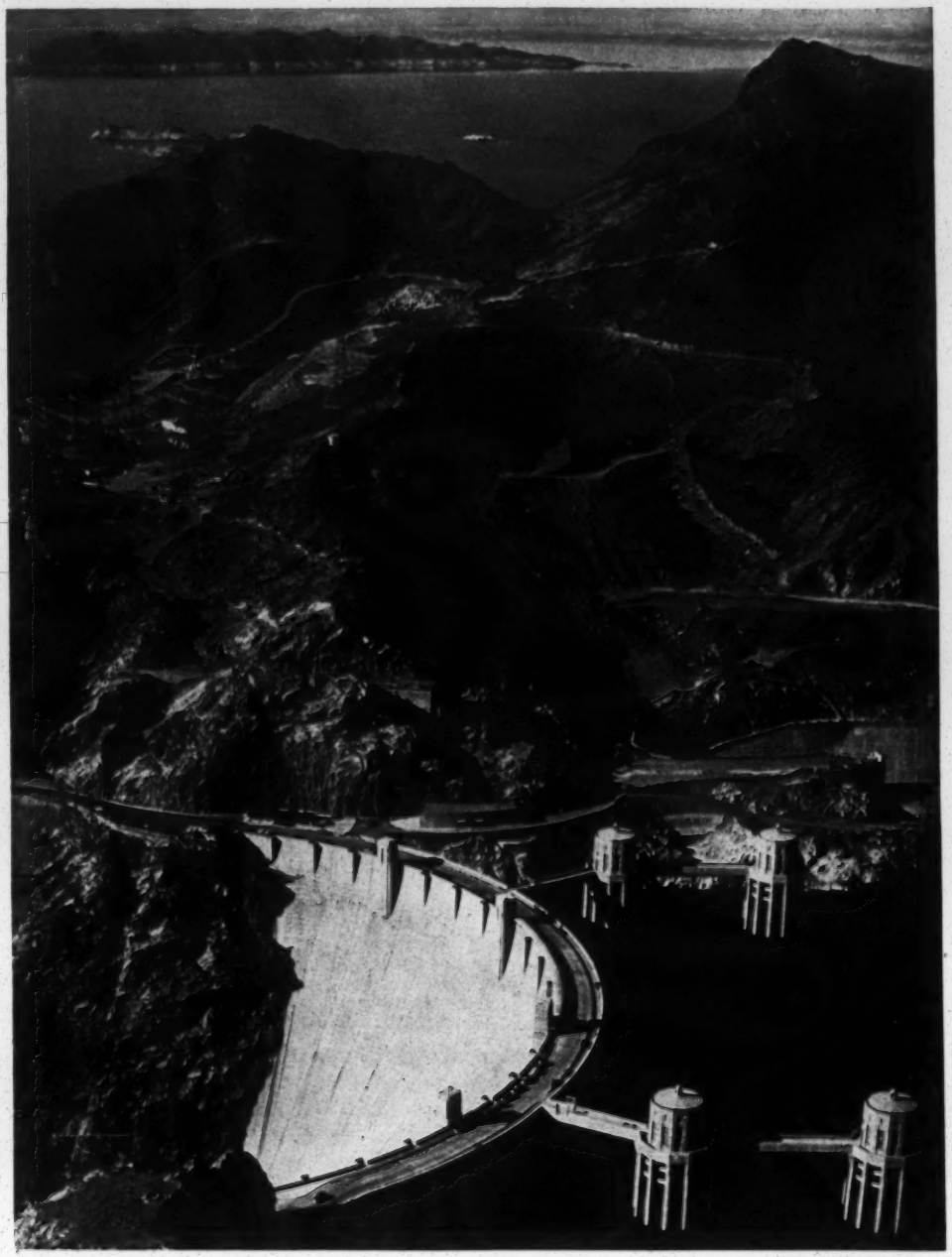

WILLIAM BELKNAP, JR.

MATCHING NATURE'S MARVELS OF THE SOUTHWEST, HOOVER DAM RISES 726 FEET AND CREATES LAKE MEAD

This graceful curve of concrete plugs Boulder Canyon of the Colorado River and provides power for sections of Nevada and California. The roadway along the dam crest joins Nevada (far side) and Arizona. These three states, plus Utah, Colorado, and New Mexico, fill most of the National Geographic Society's newest 10-color map—Southwestern United States—which was released as a supplement to the December, 1948, issue of the NATIONAL GEOGRAPHIC MAGAZINE.

Tokelau Islands Annexed by New Zealand

THE tiny Tokelau Islands of the southwest Pacific, which last spring for the first time hung out a "Postage Stamps for Sale" sign, started 1949 with another shingle for the world to read: "Under New Management —Business as Usual."

Business for some 1,400 Tokelau islanders means preparing copra (illustration, next page) and weaving sturdy floor mats for export when steamers make their rare calls at the islands. It will proceed as usual, since the new management involves no great change. By democratic prearrangement, January 1 saw the New Zealand administration on behalf of Great Britain become the New Zealand administration on behalf of the Dominion of New Zealand.

Population on the Increase

The Tokelaus, one of those "faraway places with strange-sounding names," take their name from the Polynesian word for "100 isles." The 100 islets of the group, however, are all within three typical low-lying coral atolls, each with its central lagoon. They lie 300 miles north of Apia harbor in Western Samoa, the New Zealand trust territory from which they are administered. They total less than five square miles of coral sand. The islanders are quiet, friendly, and hospitable. They were almost totally unaffected by the war.

Women slightly outnumber men in the Tokelau population of mixed Polynesian and Melanesian strain. The number of inhabitants has grown from 1,170 in 1936 to 1,416 in late 1947, taxing the capacity of the infertile soil. No governing officials live on the islands, and until 1925, the light hand of administration was even more remote than Apia, having been in Great Britain's Gilbert and Ellice Islands Colony. The group was then known as the Union Islands.

The three Tokelau atolls span 100 miles of ocean. They are Fakaofo (Bowditch) and Atafu (Duke of York Island), each representing about one square mile of land; plus Nukunono (Duke of Clarence Island), whose islets exceed two square miles. One islet of each atoll is reserved for growing the stubby tauanave tree, only source of timber for building dwellings and canoes.

Swains Island Handed over to the United States

The Tokelau people, like most other islanders in the south Pacific, augment the yield of the land with the bounty of the sea. Fishing (illustration, cover) is a universal occupation. However, there are more than 300 Tokelauans per square mile, and many have sought to improve their lot in recent years by migrating to such Pacific centers as Apia, Suva, and Papeete.

Until 1925, Swains, or Gente Hermosa Island, 100 miles southeast of Fakaofo, was classed as one of the group, although virtually an isle without a country because of its isolation. In May, 1925, Swains was

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JACK BREED

GROSVENOR ARCH, SOARING UPWARD 152 FEET, PERMITS A GLIMPSE OF UTAH'S BRILLIANT HEAVENS THROUGH A DOUBLE SKYLIGHT NEAR THE TOP

Portuguese Buy Beira, Portuguese Port

WHEN is a Portuguese port not a Portuguese port?

The answer to this riddle could be found until recently in the city of Beira, Mozambique (Portuguese East Africa). For more than 50 years this port was operated as a private concession by a British-owned company. Now the Portuguese government, instead of renewing the foreign lease, has exercised its right to buy all the shares and by January 1 had completely redeemed the city, making the Portuguese port once more a Portuguese port.

Third Port of Southern Africa

There was nothing unusual about Beira's status. For example, companies financed by United States money have acquired long-term leases in such places as the Middle East oil lands and the Central American banana-growing areas and have built ports, railroads, and other permanent works to aid in exporting the wealth to world markets.

Beira (map, next page), though little known in the United States, is important in its own part of the world, being outranked as a port by only two other cities in all southern Africa. It is the handiest sea outlet for vast areas of Mozambique, Northern and Southern Rhodesia, Nyasaland, and the Belgian Congo. A gentle curve of the Mozambique Channel shoreline seems specially designed to make Beira the nearest Indian Ocean port to the riches of Southern Rhodesia.

Almost astride the 20-degrees-south latitude line, the city lies on a sandspit along the estuary of the Pungwe and Buzi rivers. It is 120 miles southwest of the delta mouth of the Zambesi River, and 530 ship miles north around a land bulge from Lourenço Marques, Mozambique's capital and chief port.

Native Africans are a majority in the port population of 25,000, which includes some 3,000 Europeans and half as many Asians. Sofala, where Vasco da Gama, in 1502, set up the first Portuguese trading station on Africa's east coast, lies south across the estuary.

Company Built Railroad to Rhodesia

Beira's development is entirely modern. Starting as a Portuguese military post in 1884, it received its present name soon after, in honor of newborn Prince Luis Felipe, Duke of Beira (northern Portugal). Port operations date from 1891, when a Portuguese charter extended virtual sovereign rights to the British-financed Mozambique Company. In addition to the city, the Georgia-size territory of Manica and Sofala was carved out of the huge Portuguese colony and included in the concession.

By the turn of the century, the company had opened a 212-mile railroad westward to the Manica goldfields on the Rhodesian border around Umtali, and the gold hunt there became a gold rush. Later, the line was extended to Salisbury, Southern Rhodesia's capital, tapping that country's chrome, copper, gold, asbestos, and agricultural products.

A rail line from Beira north to the Zambesi River and Lake Nyasa has

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officially annexed by the United States as part of American Samoa as a result of a request by Great Britain.

The three postage stamps which put the Tokelaus on the philatelic map in 1948 show native scenes on each of the three atolls. The island chiefs have repeatedly expressed loyalty to their New Zealand administrator, and backed their expressions even to the point of cash contributions for helping the Allied cause in World War II.

NOTE: The Tokelau Islands may be located on the Society's map of the Pacific Ocean and the Bay of Bengal, on which they are shown in large-scale insets.

TRUMAN BAILEY FROM THREE LIONS

BY SUCH SIMPLE METHODS, COPRA IS STARTED ON ITS WAY TO MARKET

A South Sea Islander reams the meat from a freshly opened coconut with a sharp-pointed stake. The watery mass is dried in the sun and, in such out-of-the-way spots as the Tokelau Islands, stored until the next steamer comes. In pressing plants, the valuable oil is squeezed out. This oil is used in the manufacture of soap, candles, and other articles, and the pressed cake that remains makes good fodder and fertilizer. About 30 coconuts will produce one gallon of oil.

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Bulletin No. 4, January 31, 1949

Like Men, Not All Ants Are Industrious

"HOW industrious is an ant?" This question is about as hard to answer as "How busy is a man?" "It all depends"—on the ant, as well as on the man.

According to a recent scientific study carried on in Panama of the Dorylines, or army ants, these insects do not all deserve the popular reputation of their kind as shining examples to carefree grasshoppers or improvident human beings.

Size Makes No Difference

About 40 per cent of these insects—also called "legionary ants"—appeared to do nothing. Another 40 per cent were hard workers. The remaining 20 per cent varied in their habits as do members of any human community. As a whole, this particular variety of ant is chiefly noted for the destruction it leaves behind it.

Great hordes of army ants march in military formation in search of spiders, cockroaches, and numerous other insects. Because these crawling soldiers are blind, the size of an obstacle makes no impression on them—they will as quickly stampede an elephant as a beetle. Their lines of battle may measure an ant or two in width, or three feet.

The way of the ant in social organization and everyday activities is, in many details, like that of man. From a child watching a death struggle between red and black ants to a naturalist taking notes on a new species, observers have found that the ant's-eye view is a fascinating one.

The highly adaptable ant, like man, has succeeded in spreading over the whole world. Already 8,000 species, subspecies, and varieties are known. There are the "civilized" ants that grow their own food, and the "savages" that live by hunting and by eating weaker insects. In column or swarm, the battle technique of warring groups has been developed to an insect science.

Amazon Ants Enslave Others

The harvesting ant—possibly the one King Solomon referred to in his advice, "Go to the ant, thou sluggard"—thriftily stores up grain against hard times. These ants have developed millers among their numbers whose heads are much larger than the general run of the group in order to contain the enormous jaws with which they grind grain.

Some varieties of ant are obvious racketeers, preying on groups of hard workers for their food supplies. Still others, like the fighting Amazon ants (which are unable to work or care for themselves), manage by raiding other settlements and carrying off the young ants to act as their slave laborers.

Certain ants harbor permanent guests or domesticated pets. Their "cows" are aphids, or plant lice. "Pastured" on corn or other plant roots, these tiny creatures, when stroked by the masters in a process somewhat like milking, give out honeydew, a honeylike substance which is a favorite food of ants.

Ants have developed a complicated social system and trained their

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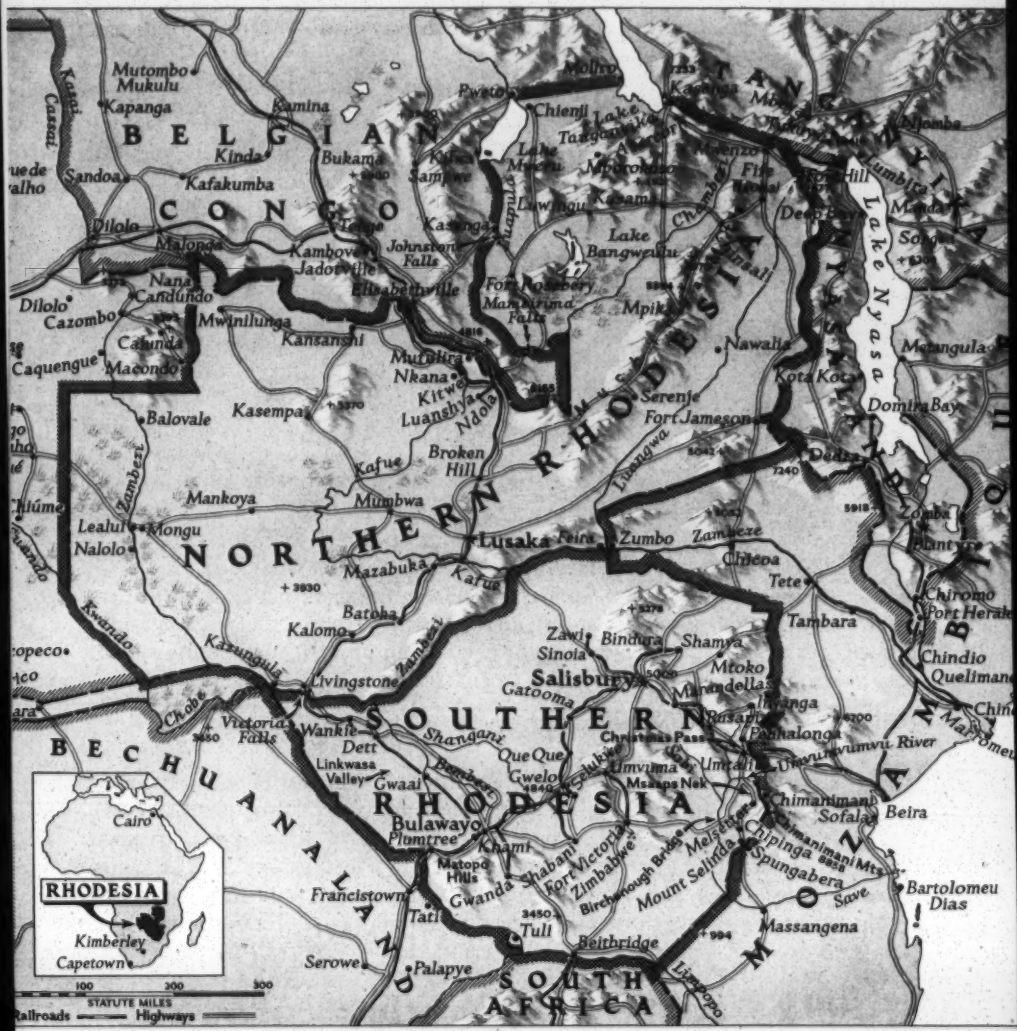
opened the port to the tea, cotton, and tobacco of Nyasaland. Completion, in 1949, of a branch route up the Zambesi to vast coalfields around Tete will make Beira a coal-exporting and -bunkering port.

Dredging and dock building, frequently renewed since the mid 1920's, have made the harbor deep enough for ships of 24-foot draft. Sturdy buildings of stone and brick have replaced the old wood and galvanized-iron construction. The climate is healthful, though summers are warm. Ideal winter weather, from May to October, has made Beira a popular resort with landlocked Rhodesians. Its attractions include sandy beaches and a golf course.

NOTE: Beira may be located on the Society's map of Africa.



BEIRA (lower right) SEEMS DWARFED BY THE IMMENSE AREA OF ITS TRADE HINTERLAND; LAKE, RIVER, HIGHWAY, AND RAILROAD BRING TO IT THE GOODS OF THIS RICH REGION

Bulletin No. 5, January 31, 1949

Navy Maneuvers Spotlight Kodiak Island

KODIAK Island, the locale chosen by the United States Navy for a month of wide-range, raw-weather tests of ships, men, and equipment, rocketed to top importance in hemisphere defense with the outbreak of World War II in 1939.

At the time of the Pearl Harbor attack, this largest of islands in Alaskan waters was the site of a fast-growing naval sea and air base and a Coast Guard station. Current strength at all installations is only a small fraction of the wartime complements.

Winters Milder than Boston's

Kodiak, nearly 100 miles long and 50 miles wide, compares with Connecticut in area. It lies 1,500 miles northwest of Seattle at the western edge of the Gulf of Alaska. Rising from shores of green forest and grassland to a frigid central maze of granite and quartz peaks, the island is an outcropping of the Chugach-Kenai mainland range. Shelikof Strait separates it from the mainland.

The Kodiak area, where the Navy operations are scheduled for late January and most of February, is noted for freakish bursts of rain and wind, sunshine, and sudden cold. Due to the warm Japan Current and the protection from the Arctic which the Alaska Peninsula affords, Kodiak winters are milder than those of Boston, which lies 1,000 miles farther south. Kodiak thermometers average a mild 30 degrees for January, and have never dipped under 12 degrees below zero.

There are signs that primitive settlers from northeastern Siberia lived on Kodiak 2,000 years ago. They may have migrated southward and been forerunners of North American Indians. Russian fur hunters reached Kodiak about 1763.

By 1791, these pioneers from Asia had settled St. Paul village on the sheltered-harbor site of northeastern Kodiak, where Kodiak town now stands (illustration, next page). The Russian (Greek Orthodox) church at Kodiak is the oldest church in Alaska. The town is probably the oldest continuous settlement in Alaska, since salmon and herring packers moved in when Russian fur exploiters moved out.

Home of Kodiak Bear

Kodiak grew from 442 people in 1930 to 864 in 1940, when it was still a pioneer village with geese, hogs, and cattle wallowing in Main Street mud. As the war emergency heightened, it rapidly acquired paved streets and additional stores and centers to serve the spreading naval base six miles from the town. It has now settled back to a population of about 1,200.

The Kodiak name is perhaps best known because of the Kodiak bear. Roaming the island's coastal spruce forests, it is the largest carnivorous animal on earth. Tales persist of its man-killing instincts, but it is normally timid. Alaskan game laws protect it. Smaller game and birds are common along Kodiak coasts.

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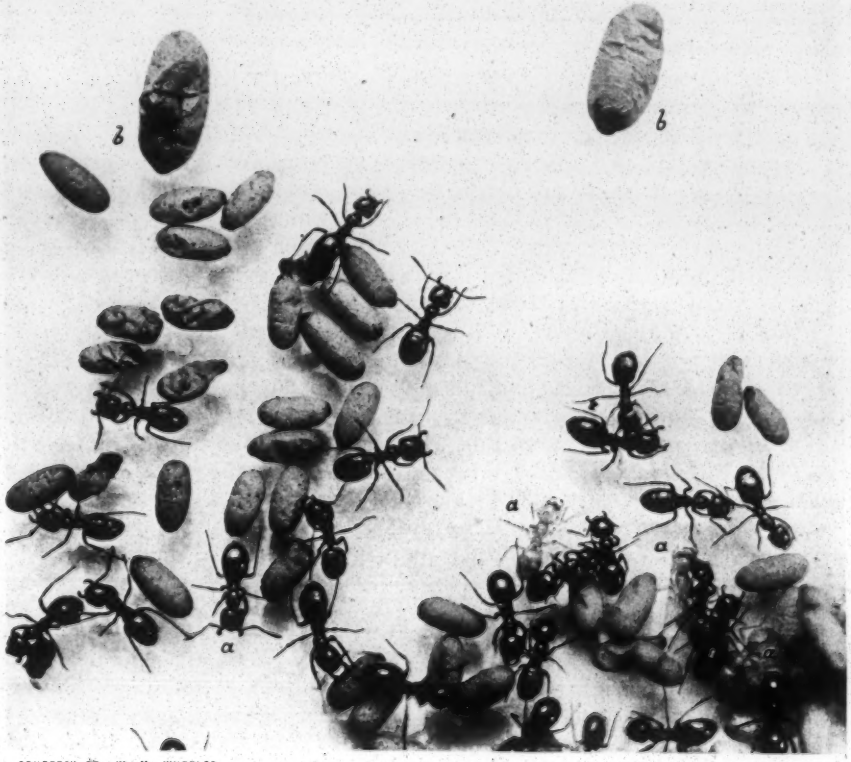
abilities to meet their own needs. Their dwellings are elaborately tunneled and sheltered nests. The ant has an unusually long life span for an insect. It frequently reaches the ripe age of 15 years.

In an ant colony, normal life centers about one or more egg-laying queens (illustration, below). The ruler is attended and supplied by many workers which she, herself, has produced. Numerous jobs for the workers in the nest are provided by the need of nursemaids for the queen's ever-increasing brood.

Ants are not only neat housekeepers, but are constantly primping and cleaning themselves and one another. In their leisure moments, they have been observed apparently playing games. Friendly wrestling matches appear to be one of their amusements.

NOTE: For additional information, see "Stalking Ants, Savage and Civilized" and "Work and War in the World of Ants" (18 color paintings), in the *National Geographic Magazine* for August, 1934.



COURTESY DR. W. M. WHEELER

J. G. HUBBARD AND DR. O. S. STRONG

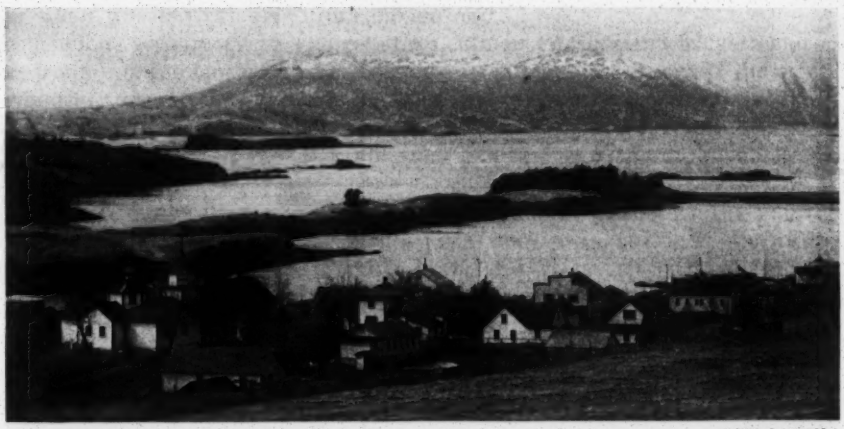
ACTIVE ANTS DASH HERE AND THERE TO GREET THE ARRIVAL OF NEW LABORERS

With characteristic energy, these six-legged insects elbow their way through the crowd, which is increasing as new workers come out of their cocoons. Like bees and wasps, to which they are akin, ants actually have elbows. They are in the antennae which project from their large heads. From the cocoons, lying about like so many kernels of puffed rice, worker ants will emerge. The pale, ghostly ants (a) have just left their cocoons. These are workers, born to slave for the ant queens still wound up in their much larger cocoons (b).

Unsuited for truck farming, Kodiak Island (and neighboring Afognak Island, which is similar in character) holds considerable of Alaska's limited grassland. Cattle ranches have been started with the help of the United States Department of Agriculture. The island could support more families interested in livestock raising, with fishing and lumbering as off-season source of income. Packing plants, however, are now limited to canneries preparing the many kinds of salmon caught near by.

NOTE: Kodiak Island is shown on the Society's map of Canada, Alaska & Greenland.

For further information on Alaska and the islands off its coast, see "Exploring Aleutian Volcanoes," in the *National Geographic Magazine* for October, 1948; "*Endeavour* Sails the Inside Passage," June, 1947; "First American Ascent of Mount St. Elias," February, 1947; "Riddle of the Aleutians," December, 1942; and "Mapping the Home of the Great Brown Bear," January, 1929.



LOUIS R. HUBER

QUAINT KODIAK, WITH ITS RUSSIAN CHURCH AND WOOD BUILDINGS, FRONTS A LANDLOCKED BAY

This mountain-rimmed harbor also holds one of Alaska's important naval bases, six miles from the town and out of sight. The church (left) is the oldest in Alaska. Kodiak boomed during World War II when its streets were paved and new stores were built to serve the growing naval base.

Threat to Neutral Isle on French Border Is Geographic, Not Political

On the French-Spanish frontier, a neutral spot is threatened by geographic, not political forces. The boundary-marking Bidassoa River, flowing into the Bay of Biscay, is gradually submerging the international Island of Pheasants.

Both French and Spanish technicians are seeking ways and means to save their less-than-an-acre plot of neutral ground from disappearing beneath the water. For with it would be lost historic associations with scenes of war- and peace-making, of royal weddings arranged, and of royal prisoners exchanged. The most celebrated event on Pheasants Isle, and the one that gave it an alternate name, "Island of the Conference," was the signing, in 1659, of the Treaty of the Pyrenees.

At this meeting, which ended a war between France and Spain, the marriage of French Louis XIV to the daughter of the Spanish monarch, Philip IV, was planned. When the wedding took place the next year, the Spanish bride's father stayed on Pheasants Island. With his party was court painter Velasquez, who, in a tragic footnote, died soon after. Many other ceremonies at Pheasants Island illustrated the old custom of strengthening empire through marriage.

In modern times, this dot of land still witnesses important events. It is just below the International Bridge, whose center marks the dividing line between France and Spain, a border that was closed in March, 1946. Two years later, the border was reopened, and once more trade and passengers, by air, train, river, and automobile, began flowing past the island.